

NIEM-Maritime Exchange Model Summary

Notice of Arrival (NOA)

Version 1.0 January 2015

ABOUT THIS DOCUMENT

Information sharing is about implementing services to move and manage the information required to execute our missions. The implementation of an information exchange service requires a valid common exchange model *and* a defined process for requesting and providing the information.

The Exchange Model Summary document provides information about both the exchange model and the exchange process used within the Maritime Information Sharing Environment (MISE). Contained in this document are the artifacts used to develop and document the exchange model, an example sequence of user and system actions that are the sharing process, and descriptions of the associated data exchange elements.

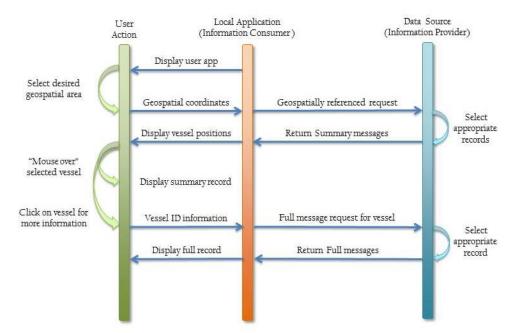
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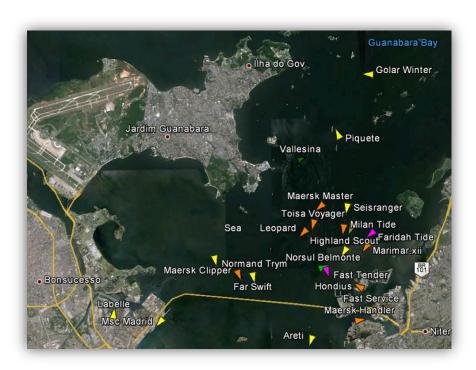
Information Exchange Sequence

An information sharing process can be as simple as a direct, single service that requires no interaction and does not change. However, frequently the exchange process includes user interaction. An understanding of that interaction and the associated data for each step is required before the exchange service can be established. This sequence diagram is an example of a process that could be used.



In this example, a user, using a local application, draws a box around a desired area on a geospatial display. The geospatially referenced request is sent from the information consumer to the information provider using an agreed upon request format. The returned message is a summary message for each of the vessels in the geospatial box.

The returned information is displayed on the users application display.





If the user mouses over on a specific vessel, a "baseball card" of the summary information is displayed.



If the user clicks on a vessel, the vessel identification information is sent from the information consumer, via a previously defined request message format, to the information provider. The information service returns a full message for the vessel identified. The returned data set is received and displayed on the users application display.



This sequence depicts a possible process; many others could be defined. The important point is that a process is defined and agreed upon *before* the service is implemented.



INFORMATION EXCHANGE PACKAGE DOCUMENTATION (IEPD)

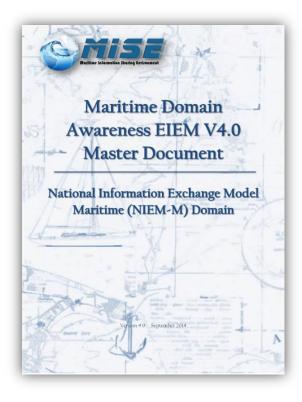
NIEM—the National Information Exchange Model—is a community-driven, standards-based approach to exchanging information and is used by the MISE to define maritime exchange models. NIEM is organized by communities, or Domains. The NIEM *Maritime* Domain (NIEM-M) is sponsored by an inter-agency Maritime Domain Awareness (MDA) Executive Steering Committee (MDA ESC).

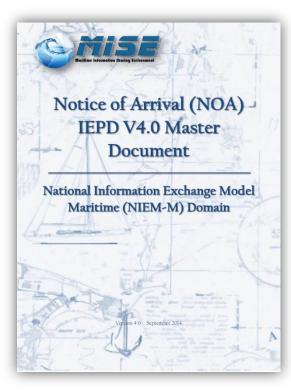
Within NIEM, there are several documents used to describe or define exchange models. One of those documents is the Information Exchange Package Documentation (IEPD).

IEPDs are a cornerstone document for MISE information exchanges. Each IEPD defines a specific exchange model or message. A unique IEPD called as Enterprise Information Exchange Model (EIEM) defines Basic Information Exchange Components (BIEC). BIECs are blocks of information that are common to multiple IEPDs.

The NOA IEPD defines a Notice of Arrival message using a number of definitions, including the definition of CDC Cargo, Crew and Non-Crew Nationality Count, Movement, Port Visit, Position, Vessel Characteristics, Vessel Identification and Voyage Information from the Maritime EIEMs and NOA IEPD unique definitions of Crew, NOA Information, NOA Notice, Non-Crew, and OCS Information

IEPD materials are accessible and downloadable at www.mda.gov.

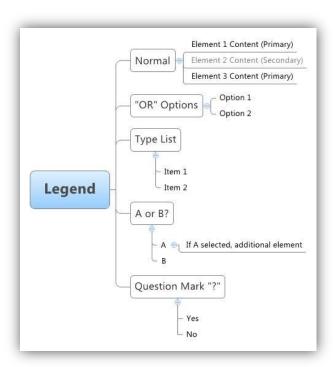






LOGICAL DIAGRAMS

XML messages from the IEPDs can be confusing and difficult to understand for readers without a technical background. To better describe the components of an information exchange, graphical representations of the data elements associated with the exchange model have are provided. Below is a legend to use as a guide for the subsequent logical diagrams.



Normal - Data elements with sub-elements as branches that *contain* the data. Black sub-elements are "primary" and contained in both full and summary messages. Gray sub-elements are "secondary" and only contained in a full message.

"OR" Options - Data elements that identified the option to the user (e.g. search for vessel by position *OR* name). The option *contains* the data.

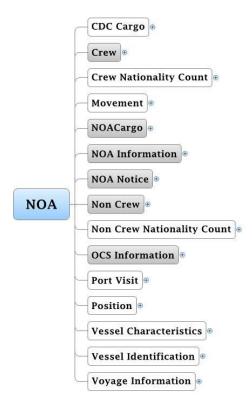
Type List - Data elements with a list of option choices. Unlike OR Options, the Type List choices *are* the data.

A or B? – Type Lists that asks user for additional information based upon the selection.

Question Mark (?) – Type Lists that are *only* yes or no answers.

EXCHANGE MODEL - BLOCK LEVEL

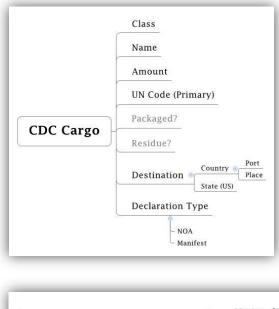
The logical data blocks for this IEPD are shown here. The blue block represents the IEPD, white blocks represent applicable BIECs and the grey block is only used in the NOA IEPD.



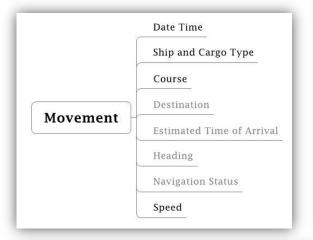


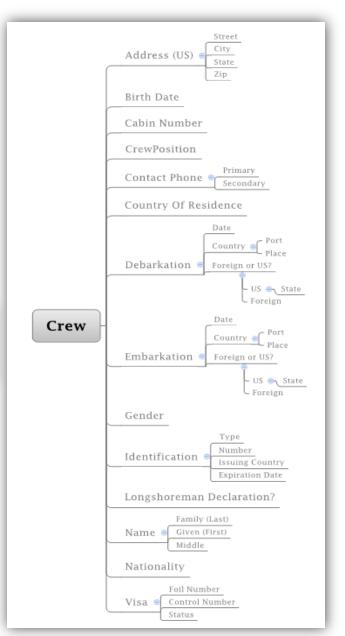
LOGICAL BLOCKS

The data elements in each logical block are shown below.



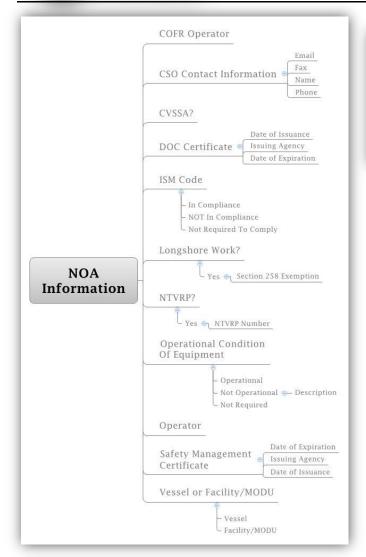


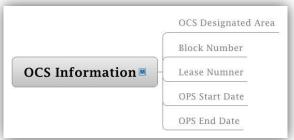




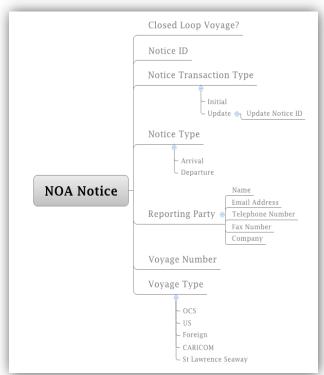




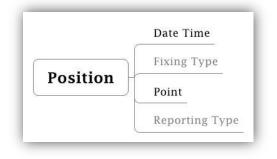




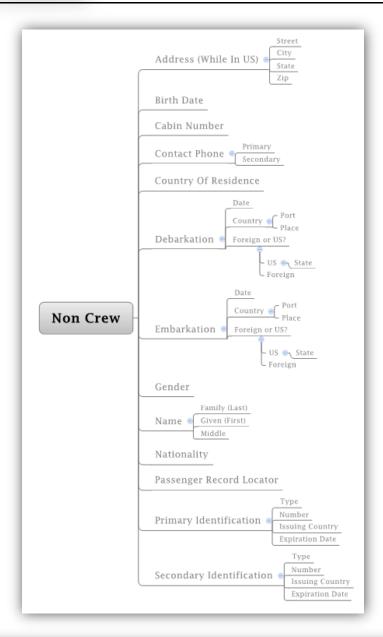


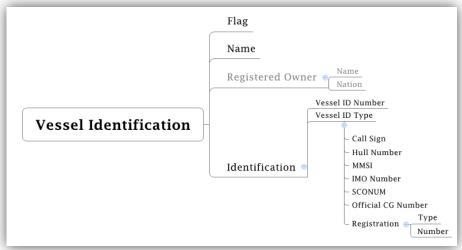






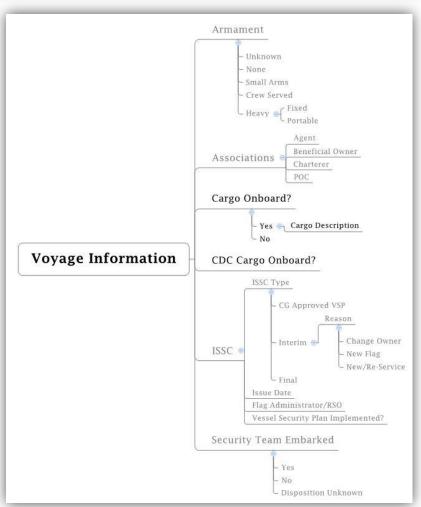








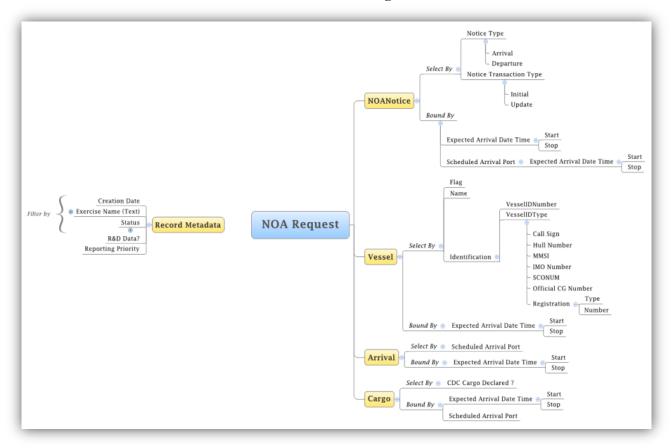






REQUEST/QUERY MODEL

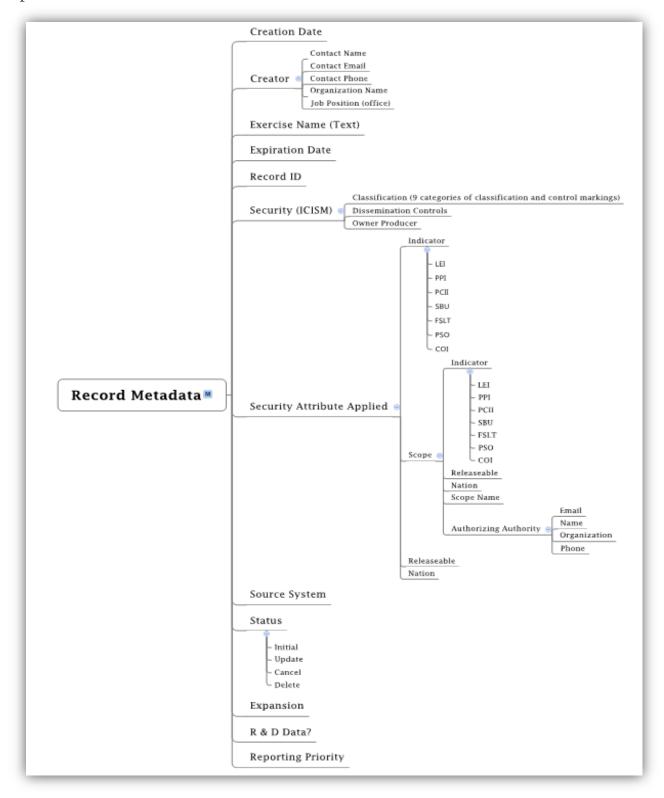
Below is a graphical representation of the request/query model for position. The yellow blocks on the right side show the methods used to request position data. The yellow block on the left side shows the *Record Metadata* used to filter the resulting data





RECORD METADATA

The record metadata shown below is used for managing the message throughout the exchange process.





DATA ELEMENT MAPPING

The following tables contain descriptions for the data elements for each data block.

CDC CARGO

Common Name	Description
Class	DOT hazmat class for a dangerous cargo
Name	A name for the dangerous cargo
Amount	The amount of dangerous cargo
UN Code	The UN code signifying the type of dangerous cargo
Packaged?	Is the dangerous cargo is packaged?
Residue?	Is dangerous cargo a residue?
Destination	 Information about the cargo destination Country - Destination country of the cargo. Information includes: Port - Destination port name Place - Destination place name State - Destination state of the cargo (If U.S. bound)
Declaration Type	Type of declaration of the dangerous cargo. Types include: NOA - Notice of Arrive Manifest - Cargo Manifest

Crew

Common Name	Description
Birth Date	Birth date
Cabin Number	The crewmembers cabin number on a vessel
Crew Position	A role a crewmember fulfills on a vessel
Contact Phone	A telephone number by which a person may be contacted. Information includes: Primary - Primary or main number Secondary - Secondary number
Country Of Residence	A country of residence, represented as a three-letter code



Crew, continued

Common Name	Description
Debarkation	Location where crewmember is debarked. Information includes: Date – Date of debarkation Country - Country of debarkation. Additional information includes: Port - Debarkation port name Place - Debarkation place name Foreign or U.S Foreign or U.S. debarkation? Types include: U.S. State - If U.S., what state Foreign
Embarkation	Location where crewmember is embarked. Information includes: Date – Date of embarkation Country - Country of embarkation. Additional information includes: Port - Embarkation port name, or Place - Embarkation place name Foreign or U.S Foreign or U.S. debarkation? Types include: U.S. State - If U.S., what state Foreign
Gender	Gender of person
Identification	Identification of the crewmember. Information includes: Type - Type of Identification Number - Identification number Issuing Country - Country identification was issued Expiration date - Identification expiration date
Longshoreman Declaration?	Is Crewmember performing longshoreman work while vessel is in port?
Name	Name of the crewmember. Information includes: Family - Family (Last) name of crewmember Given - Given (First) name of crewmember Middle - Given (First) name of crewmember
Nationality	Nationality, represented as a three-letter code
U.S. Address	U.S. address of crewmember, if applicable. Information includes: Street - Street address City - City State - State Zip - Zip code



Crew, continued

Common Name	Description
Visa	Visa. Information includes: Foil Number - Visa Foil Number or stamp Control Number - Control Number of Visa Status - Visa's Status

CREW NATIONALITY COUNT

Common Name	Description
Nationality Code	The nationality of one or more crew members on board a vessel, represented as a three-letter code
Quantity	A number of crewmembers on board a vessel of a particular nationality

MOVEMENT

Common Name	Description
Date Time	The date and time of the movement of a vessel
Ship Type	Type of vessel performing the movement
Cargo Type	Type of cargo reported by the vessel performing the movement
Course	Vessel course for this movement
Destination	Next port this vessel will arrive at as of this movement date time
Estimated time of Arrival (ETA)	The expected date and time a vessel will arrive at a next port
Heading	Vessel heading for this movement
Navigation Status	Vessel navigational status for this movement
Speed	Vessel speed of this movement

NOA CARGO

Common Name	Description
General Cargo Declared?	Whether vessel is carrying cargo
General Cargo Description	The kind of cargo that a vessel is carrying
CDC Cargo Declared?	Whether the vessel is carrying hazardous or Certain Dangerous Cargo (CDC)



NOA INFORMATION

Common Name	Description
Cert. of Financial Responsibility	A responsible party for the Certificate of Financial Responsibility for a vessel
CSO Contact Information	Certified Security Operator (CSO) Contact Information. Information includes: Name - Contact name Email address - Contact email address Telephone Number - Contact phone number Fax Number - Contact fax number
CVSSA On Board Indicator?	Does the vessel has at least one crew member qualified to meet 46 U.S.C Secs 3507, 3508
DOC Certificate	A Document of Compliance (DOC) Certification for a vessel. Information includes: Date of Issuance - Date certificate was issued Expiration Date - Certificate expiration date Issuing Agency - Agency or organization that issued the certificate
ISM Code	An International Safety Management (ISM) Code of the vessel. Types include: In Compliance - Vessel is ISM complainant NOT In Compliance - Vessel is NOT ISM complainant Not Required to Comply - ISM compliance is not required
Non-Tank Vessel Response Plan (NTVRP)?	Does the vessel have a Non-Tank Vessel Response Plan (NTVRP)? Choices include: • Yes, or • NTRVP Number - If yes, what is the NTVRP number • No
Operational Condition of Equipment	The status of Operational Condition of Equipment (OCE), as required in 33 CFR 164.35, on a vessel. Types include: Operational - All required equipment is operational Not Operational - All required equipment is not operational Description - A description of the failed equipment Not Required - No OCE requirement
Operator	An entity that is responsible for the day-to-day operations and travels of a vessel
Safety Management Certificate	Safety Management Certificate (SMC) for a vessel. Information includes: Date of Issuance - Date certificate was issued Expiration Date - Certificate expiration date Issuing Agency - Agency or organization that issued the certificate



NOA Information, continued

Common Name	Description
Vessel or Facility/MODU	Is this a vessel or facility reporting for an OCS NOA. Types include: • Vessel - The report is for a vessel • Facility/MODU - The report is for an afloat facility or MODU

NOA NOTICE

Common Name	Description
Closed Loop Voyage?	Does the vessel start and end from the same port
Notice ID	ID for the NOA report
Notice Type	The type of NOA being report Types include: • Arrival - A vessel arriving to a U.S. port • Departure - A vessel departing a U.S. port
Notice Transaction. Type	 The type of transaction. Types include: Initial - An initial or first report for a particular voyage Update - An update to a previous report Update Notice ID - ID number for update
Reporting Party	Information about the party submitting the NOA. Information includes: Name - Reporting party name Email address - Reporting party email address Telephone Number - Reporting party phone number Fax Number - Reporting party fax number Company - Name of the company filing the report
Voyage Number	The voyage number assigned by the shipping agent.
Voyage Type	 The type of voyage, based upon Notice Type. Types include: OCS - Outer Continental Shelf U.S U.S to U.S or U.S to CARICOM Foreign - Foreign to U.S. or Forgein to CARICOM CARICOM - CARICOM to CARICOM St. Lawrence Seaway - Foreign to St. Lawrence Seaway

Non-Crew

Common Name	Description
Birth Date	Birth date
Cabin Number	The non-crewmembers cabin number on a vessel



Non-Crew, continued

Common Name	Description
Contact Phone	A telephone number by which a person may be contacted. Information includes: Primary - Primary or main number Secondary - Secondary number
Country Of Residence	A country of residence, represented as a three-letter code
Debarkation	Location where non-crewmember is debarked. Information includes: Date – Date of debarkation Country - Country of debarkation. Additional information includes: Port - Debarkation port name Place - Debarkation place name Foreign or U.S Foreign or U.S. debarkation? Types include: U.S. State - If U.S., what state Foreign
Embarkation	Location where non-crewmember is embarked. Information includes: Date – Date of embarkation Country - Country of embarkation. Additional information includes: Port - Embarkation port name, or Place - Embarkation place name Foreign or U.S Foreign or U.S. debarkation? Types include: U.S. State - If U.S., what state Foreign
Gender	Gender of person
Name	Name of the non-crewmember. Information includes: Family - Family (Last) name of non-crewmember Given - Given (First) name of non-crewmember Middle - Given (First) name of non-crewmember
Nationality	Nationality, represented as a three-letter code
Passenger Record Locator	Non-crewmember record locator number from carrier system is applicable
Primary Identification	Primary identification of the non-crewmember. Information includes: Type - Type of Identification Number - Identification number Issuing Country - Country identification was issued Expiration date - Identification expiration date



Non-Crew, continued

Common Name	Description
Secondary Identification	Secondary identification of the non-crewmember. Information includes: Type - Type of Identification Number - Identification number Issuing Country - Country identification was issued Expiration date - Identification expiration date
U.S. Address	U.S. address of crewmember, if applicable. Information includes: Street - Street address City - City State - State Zip - Zip code

NON CREW NATIONALITY COUNT

Common Name	Description
Nationality Code	The nationality of one or more non-crew members on board a vessel, represented as a three-letter code
Quantity	A number of non-crewmembers on board a vessel of a particular nationality

OCS INFORMATION

Common Name	Description
OCS Designated Area	A designated area of the outer continental shelf
Block Number	A block number for the outer continental shelf
Lease Number	A lease number for the outer continental shelf
OCS Start Date	A date for the start of operations on the outer continental shelf
OCS End Date	A date for the end of operations on the outer continental shelf

PORT VISIT

Common Name	Description
Visit Type	 Type of Port Visit. Types include: Previous Foreign Port - The previous foreign ports of call Last Port of Call - The last port of call Next Port of Call - The next ports of call Scheduled Call - Scheduled arrival at a port of call Scheduled Departure - Scheduled departure from a port of call



Port Visit, continued

Common Name	Description
Arrival Date Time	The actual date and time a vessel arrived at a port
Departure Date Time	The actual date and time a vessel departed from a port
Country	Name of the country of the port for the arrival or departure. Options include: • Port - Port name, or • Place - Place name
Foreign or US?	Type of port? Types include: • U.S • City - If yes, what city • State - If yes, what state • Foreign
Arrival Facility/Terminal	A name of a facility that will receive a vessel while at port
Arrival Place/Anchorage	The anchorage a vessel will use while at port

Position

Common Name	Description
DateTime	The date and time of this position
Fixing Type	Type of fix for the position
Point	GML point representation for the position
Reporting Type	Type of position report

VESSEL CHARACTERISTICS

Common Name	Description
Beam	A measure of the beam (breadth) of a vessel
Classification	The vessel classification type and sub-type. Information includes: Type - The category or vessel class of a vessel • Subtype - The vessel sub-category or sub-class of a vessel
Classification Society	A name of a classification society for a vessel.
Deck Configuration	A description of the deck configuration of a vessel
Double Hull?	Does the vessel have a double hull?



Vessel Characteristics, continued

Common Name	Description
Draft	A measure of the current draft of a vessel
Gross Tonnage	The Gross Tonnage (GT) of a vessel
Ice Classification	A vessel of higher ice classification. Information includes: Ice Classification Code - The code identifying the vessel ice class Ice Classification Type - The type or organization issuing the ice class. Types include: vessel IMO - International Maritime Organization. IACS - International Association of Classification Societies ABS - American Finnish-Swedish. IACS Polar
Length	A measure of the overall length of a vessel
Picture URL	A URL of an image of a vessel
Propulsion Type	The vessel propulsion category of the vessel
Speed	The speed of a vessel. Information includes: Cruising - A measure of the cruise speed for a vessel Maximum - A measure of the maximum level of speed for vessel

VESSEL IDENTIFICATION

Common Name	Description
Flag	The national flag under which a vessel sails
Name	The name of a vessel
Registered Owner	The entity that owns a vessel. Information includes: Name - The name of the person that owns a vessel Nation - The name of the nation that owns the vessel
Identification	 Unique identification attributes of a vessel are:



Vessel Identification, continued

Common Name	Description
Identification, continued	 Other Registration - Other registration information of the vessel Type - Information about another, not otherwise specified registration for a vessel Number - Registration number of a vessel

VOYAGE INFORMATION

Common Name	Description
Armament	 The armament carried on a vessel during a voyage. Types include: Unknown - Unknown, if any, onboard None - No armaments onboard Small Arms - Pistols and/or rifles Crew Served - Mobile but not small arms (shoulder mounted) Heavy - Choices include: Fixed - Non-mobile or permanently mounted Portable - Movable
Associations	Agencies, organizations or people associated with a voyage. Information includes: **Agent - The entity acting as the agent for this voyage **Beneficial Owner - The entity benefiting from this voyage **Charterer - The entity chartering vessel for this voyage **POC - Contact information for this voyage
Cargo Onboard	Whether vessel is carrying cargo. Choices include: • Yes/No • Cargo Description - If yes, The type of cargo carried on board this vessel during this voyage
CDC Cargo Onboard?	Whether the vessel is carrying hazardous or Certain Dangerous Cargo (CDC)
ISSC	 International Ship Security Certificate. Information Includes: ISSC Type - The type of International Ship Security Certificate carried by the vessel. Types include:



ISSC, Continued

Common Name	Description
ISSC, continued	• Final - True if there is a final approved vessel security plan for the voyage, false otherwise Issue Date - A date of issue for an ISSC Flag Administrator/RSO - The entity responsible for the security of the vessel as indicated by the ISSC Vessel Security Plan Implemented - A plan implemented to manage risks associated with the potential exploitation of small vessels by terrorists in America's maritime - its ports, shores, and waterways.
Security Team Embarked	Information on the disposition of the security team on a vessel. Choices include: • Yes/No • Disposition unknown

METADATA

Common Name	Description
Creation Date	A date a document was created
Creator	Entity primarily responsible for creating the content of the resource. Information includes: Contact Name - The name of a person who is the contact for the document creator Contact Email - An electronic mailing address by which the document creator may be contacted Contact Phone - A telephone number by which the document creator may be contacted Organization Name - The name of an organization who is the document creator Job Position (Office) - Brief description of a position
Exercise Name	Exercise name
Expiration Date	A date a transmitted document expires
Record ID	A unique ID identifying a record
ICISM Marking (Security)	Security classification of data. Information includes: Classification - A single indicator of the highest level of classification applicable to an information resource or portion within the domain of classified national security information Dissemination Controls - One or more indicators identifying the expansion or limitation on the distribution of information Owner Producer - One or more indicators identifying the national government or international organization that have purview over the classification marking of an information resource or portion therein



Metadata continued

Common Name	Description
Security Attributes Applied	Characteristics of a persona that defines a user in a particular role. Security Attributes include: Indicator - Indicates the security that must be applied to the record • Law Enforcement (LEI) • Privacy Protected (PPI) • Sensitive But Unclassified (SBU) • Protected Critical Infrastructure Information (PCII) • Federal/State/Local/Tribal/Territorial (FSLT) • Private Sector Only (PSO) • Community of Interest (COI) Scope - Indicates the security that must be applied to this record within the context of the named scope • Indicator - LEI, PPI, SBU, PCII, FSLT, PSO, COI • Releasable - Whether the data is releasable in the context of the names scope • Nation - The nations which the data can be released in the context of the named scope • Scope Name - Name of the scope in which the security and releasablity is modified • Authorizing Authority - Entity authorizing the use of the set of attached scope attributes on this metadata element. Includes the following information: • Email - The email of the authorizing authority • Name - The name of the authorizing authority • Organization - The organization of the authorizing authority • Phone - The phone number of the authorizing authority
Status	A status of a record that can be any of the following: Initial - New record Update - Change or update to an existing record Cancel - Cancelation of existing record Delete - Deletion of an existing record
Expansion	Additional information
Research and Development Data?	True if the information in the record is for research & development efforts, false otherwise
Reporting Priority	Numeric value representing how often this record is updated

